

# THE VASCULAR PLANTS OF MOWOTONY PRAIRIE: A SMALL REMNANT COASTAL GRASSLAND IN BRAZORIA COUNTY, TEXAS

D.J. Rosen

Department of Biology  
Lee College  
Baytown, Texas 77522-0818, U.S.A.  
drosen@lee.edu

## ABSTRACT

A survey of the vascular flora of Mowotony Prairie, a 42 ha Texas coastal grassland remnant, resulted in a checklist of 199 species of vascular plants representing 41 families and 129 genera. The four families with the most species were Poaceae (45), Asteraceae (38), Cyperaceae (30), and Fabaceae (19). Species-rich genera included *Carex* (7 spp.), *Cyperus* (8 spp.), *Juncus* (6 spp.), *Panicum* (5 spp.), and *Paspalum* (6 spp.). Non native species accounted for 2% of the total number of species. The native flora comprised 195 species distributed in 41 families. Forty one native species and one family that do not occur at Nash Prairie were collected at Mowotony Prairie. The native vascular plant taxa from Mowotony Prairie combined with those reported from Nash Prairie provides a documented 63 families and 331 species for remnant grasslands of the Upper Texas Coast. Local dominance of *Sporobolus silveanus* at Mowotony Prairie suggests a more historically widespread distribution of this species.

## RESUMEN

Un estudio de la flora vascular de la Mowotony Prairie, con unas 42 ha de resto de la pradera costera de Texas, dio como resultado una lista de 199 especies de plantas vasculares de 41 familias y 129 géneros. Las cuatro familias con más especies fueron Poaceae (45), Asteraceae (38), Cyperaceae (30), y Fabaceae (19). Los géneros más ricos en especies-fueron *Carex* (7 spp.), *Cyperus* (8 spp.), *Juncus* (6 spp.), *Panicum* (5 spp.), y *Paspalum* (6 spp.). Las especies no nativas fueron un 2% del número total de especies. La flora nativa comprende 195 especies distribuidas en 41 familias. Cuarenta y una especies nativas y una familia que no aparecen en la Nash Prairie se colectaron en la Mowotony Prairie. Los taxa de plantas vasculares nativas de la Mowotony Prairie combinadas con las de la Nash Prairie llegan a documentar 63 familias y 331 especies para los restos de pradera de la costa superior de Texas. La dominancia local de *Sporobolus silveanus* en la Mowotony Prairie sugiere una distribución histórica de esta especie mucho más amplia.

I previously reported a species rich flora for Nash Prairie, a 120 ha remnant of undisturbed Texas coastal grassland (Rosen 2007). During the course of that research, I simultaneously surveyed Mowotony Prairie, a smaller but equally rich and unique coastal grassland. Mowotony Prairie is a 42 ha remnant coastal grassland also located on the Kittie Nash Groce (KNG) Ranch in Brazoria County, Texas (N29°16'16.0"W95°40'19.5"; Fig. 1, Fig. 2). Like Nash Prairie, Mowotony Prairie has similar topographic features, disturbance history, management, and use. The purpose of this paper is to provide an annotated checklist of the vascular plants of Mowotony Prairie and add additional taxa to the native flora of Texas coastal grasslands. Nash and Mowotony Prairies and other remnant coastal grasslands are threatened by the expanding Houston Metropolitan Area (Fig. 1).

## CHECKLIST

Families are arranged alphabetically, beginning with monocots, and followed by eudicots. Genera, species, and infraspecific names are arranged alphabetically under families and their classification generally follows Jones et al. (1997). *Dichanthelium* (Hitchc. & Chase) Gould is treated separately from *Panicum* L. Nativity (species native to the United States) is based on Correll and Johnston (1970). Non-native species are indicated by an asterisk (\*). Native coastal grassland taxa not reported from Nash Prairie (Rosen 2007) are indicated by a superscript dagger (†). Finally, endemic (with distribution limited to grasslands of the Upper Texas Coast or with the greatest extent of their range occurring therein), rare (of limited range), or regionally rare (seldom occurring or of previously unknown occurrence in grasslands of the Upper Texas Coast) species are





FIG. 1. Location of Kittie Nash Groce (KNG) Ranch (•) and approximate historic boundary of coastal grasslands of the Upper Texas Coast (dash-dotted line).

indicated by a superscript lower case bold **e**, **r**, or **rr** respectively based on review of Correll and Johnston (1970), Turner et al. (2003a; 2003b), or personal experience. A complete set of voucher specimens are housed at the University of Texas at Austin, Plant Resources Center Herbarium (TEX).

MONOCOTS

Alismataceae

- Sagittaria graminea* Michx. subsp. *graminea*, 3303
- Sagittaria papillosa* Buchenau, 4138

Alliaceae

- Nothoscordum bivalve* (L.) Britton, 3279

Amaryllidaceae

- \**Cooperia traubii* W. Hayw., 4382
- Hymenocallis lariosme* (Raf.) Shinnery, 3304

Commelinaceae

- †*Tradescantia hirsutiflora* Bush, 4041
- †*Tradescantia occidentalis* (Britton) Smyth var. *occidentalis*, 3396

Cyperaceae

- Carex bushii* Mack., 3328
- Carex cherokeensis* Schwein., 3302

- Carex festucacea* Schkuhr ex Willd., 3321
- Carex flaccosperma* Dewey, 3301
- Carex longii* Mack., 3386
- Carex meadii* Dewey, 3297
- Carex triangularis* Boeck., 3329
- †*Cyperus acuminatus* Torr. & Hook., 4425
- Cyperus drummondii* Torr. & Hook., 4190
- Cyperus echinatus* (L.) Alph. Wood, 4189
- Cyperus fraternus* Kunth, 4151
- \**Cyperus haspan* L., 4123
- Cyperus pseudovegetus* Steud. var. *pseudovegetus*, 3377
- Cyperus retrorsus* Chapm., 4361
- Cyperus virens* Michx. var. *virens*, 4124
- ″*Eleocharis compressa* Sull. var. *acutisquamata* (Buckley) S.G. Sm., 3298
- Eleocharis microcarpa* Torr. var. *filiculmis* Torr., 3322





Fig. 2. Aerial photograph of Mowotony Prairie (boundary outlined in white), Brazoria County, Texas.



- <sup>†</sup>*Eleocharis montevidensis* Kunth, 3296  
*Eleocharis quadrangulata* (Michx.) Roem. & Schult., 4378  
<sup>¶</sup>*Eleocharis wolfii* (A. Gray) A. Gray ex Britton, 3388  
*Fimbristylis puberula* (Michx.) Vahl var. *puberula*, 3380  
<sup>†</sup>*Isolepis carinata* Hook. & Arn. ex Torr., 3295  
*Rhynchospora caduca* Elliott, 3333  
*Rhynchospora corniculata* (Lam.) A. Gray, 4120  
*Rhynchospora globularis* (Chapm.) Small var. *globularis*, 4136  
<sup>†</sup>*Rhynchospora harveyi* W. Boott var. *harveyi*, 4147  
*Rhynchospora recognita* (Gale) Kral, 4572  
*Scleria ciliata* Michx. var. *elliottii* (Chapm.) Fernald, 3332  
<sup>¶</sup>*Scleria muehlenbergii* Steud., 4575  
*Scleria pauciflora* Muhl. ex Willd. var. *pauciflora*, 3330

### Hypoxidaceae

- Hypoxis hirsuta* Coville, 3282

### Iridaceae

- Herbertia lahue* (Molina) Goldblatt, 3399  
<sup>†</sup>*Sisyrinchium ensigerum* E. P. Bicknell, 3281

### Juncaceae

- Juncus acuminatus* Michx., 3379  
*Juncus brachycarpus* Engelm., 3387  
<sup>†</sup>*Juncus dichotomus* S. Elliott, 3344  
<sup>¶</sup>*Juncus elliottii* Chapm. var. *elliottii*, 3385  
*Juncus marginatus* Rostk., 3384  
*Juncus nodatus* Coville, 3383

### Orchidaceae

- Spiranthes vernalis* Engelm. & A. Gray, 3395

### Poaceae

- Agrostis hyemalis* (Walter) Britton, Sterns & Poggenb. var. *hyemalis*, 3271  
*Andropogon gerardii* Vitman subsp. *gerardii*, 4359  
<sup>†</sup>*Andropogon glomeratus* (Walter) Britton, Sterns & Poggenb. var. *pumilus* (Vasey) Vasey ex L.H. Dewey, 4564  
*Andropogon ternarius* Michx. var. *ternarius*, 4577  
<sup>†</sup>*Andropogon virginicus* L. var. *virginicus*, 4571  
*Aristida purpurascens* Poir., 4435  
*Axonopus fissifolius* (Raddi) Kuhlm., 4139  
*Axonopus furcatus* (Flüggé) Hitchc., 4370  
<sup>¶</sup>*Bothriochloa exaristata* (Nash) Henrard, 4381  
<sup>\*</sup>*Briza minor* L., 3288  
<sup>\*</sup>*Cynodon dactylon* (L.) Pers., 4583  
*Dichanthelium aciculare* (Desv. ex Poir.) Gould & C.A. Clark subsp. *aciculare*, 3323  
*Dichanthelium acuminatum* subsp. *acuminatum* (mixed with *D. oligosanthos* (Schult.) Gould subsp. *scribnerianum* (Nash) Freckmann & Lelong), 3319  
<sup>†</sup>*Dichanthelium oligosanthos* (Schult.) Gould subsp. *scribnerianum* (Nash) Freckmann & Lelong (mixed with *D. acuminatum* subsp. *acuminatum*), 3319  
<sup>†</sup>*Dichanthelium portoricense* (Desv. ex Ham.) B.F. Hansen & Wunderlin subsp. *patulum* (Scribn. & Merr.) Freckmann & Lelong, 3284  
*Dichanthelium sphaerocarpon* (Elliott) Gould, 3337  
*Digitaria cognata* (Schult.) Pilg., 4580  
*Eragrostis lugens* Nees, 4434  
*Eragrostis refracta* (Muhl. ex Elliott) Scribn., 4566

- Eragrostis spectabilis* (Pursh) Steud., 4565  
*Leersia hexandra* Sw., 4141  
*Muhlenbergia capillaris* (Lam.) Trin., 4427  
*Panicum bergii* Arechav., 4187  
*Panicum dichotomiflorum* Michx., 4390  
*Panicum hemitomom* Schult., 4126  
<sup>†</sup>*Panicum rigidulum* Bosc ex Nees subsp. *pubescens* (Vasey) Freckmann & Lelong, 4274  
*Panicum rigidulum* Bosc ex Nees subsp. *rigidulum*, 4371  
*Paspalum floridanum* Michx., 4357  
<sup>†</sup>*Paspalum laeve* Michx., 4433  
*Paspalum plicatulum* Michx., 4122  
*Paspalum praecox* Walter, 4121  
*Paspalum setaceum* Michx. var. *muhlenbergii* (Nash) D.J. Banks, 4358  
<sup>\*</sup>*Paspalum urvillei* Steud., 4129  
*Paspalidium geminatum* (Forssk.) Stapf var. *geminatum*, 2601  
*Phalaris angusta* Nees ex Trin., 3272  
*Schizachyrium scoparium* (Michx.) Nash var. *scoparium*, 4362  
<sup>†</sup>*Schizachyrium tenerum* Nees, 2600  
*Setaria parviflora* (Poir.) Kerguelen, 4364  
*Sorghastrum nutans* (L.) Nash, 4430  
*Sphenopholis obtusata* (Michx.) Scribn. var. *obtusata*, 3324  
*Sporobolus compositus* (Poir.) Merr. var. *macer* (Trin.) Kartesz & Gandhi, 4363  
<sup>¶</sup>*Sporobolus silveanus* J. Swallen, 2599  
*Steinchisma hians* (Elliott) Nash, 4140  
*Tridens strictus* (Nutt.) Nash, 4389  
*Vulpia octoflora* (T. Walter) P. Rydberg var. *octoflora*, 3327

## EUDICOTS

### Acanthaceae

- Justicia ovata* (Walter) Lindau var. *lanceolata* (Chapm.) R.W. Long, 4127  
*Ruellia humilis* Nutt. var. *depauperata* Tharp & F.A. Barkley, 4574  
*Ruellia nudiflora* (Engelm. & A. Gray) Urb. var. *nudiflora*, 4288

### Apiaceae

- Eryngium yuccifolium* Michx., 4272  
*Hydrocotyle umbellata* L., 3378  
*Limnoscium pinnatum* (DC.) Mathias & Constance, 3342

### Apocynaceae (Incl. Asclepiadaceae)

- Asclepias longifolia* Michx., 4135  
*Asclepias verticillata* L., 4118  
*Asclepias viridis* Walter, 3397

### Asteraceae

- Acmella oppositifolia* (Lam.) R.K. Jansen var. *repens* (Walter) R.K. Jansen, 4369  
*Ambrosia psilostachya* DC., 4396  
*Ambrosia trifida* L., 4424  
*Arnoglossum plantagineum* Raf., 3402  
<sup>†</sup>*Baccharis halimifolia* L., 4569  
*Boltonia diffusa* Elliott var. *diffusa*, 4373  
*Cirsium horridulum* Michx. var. *elliottii* Torr. & A. Gray, 3340  
*Conoclinium coelestinum* (L.) DC., 4568



†*Conyza canadensis* (L.) Cronquist var. *canadensis*, 4386  
*Coreopsis tinctoria* Nutt. var. *tinctoria*, 3389  
*Erigeron tenuis* Torr. & A. Gray, 3317  
*Eupatorium serotinum* Michx., 4397  
†*Eurybia hemispherica* (Alexander) G.L. Nesom, 3965  
*Euthamia gymnospermoides* Greene, 4374  
*Euthamia leptcephala* (Torr. & A. Gray) Greene ex Porter & Britton, 4429  
*Gamochaeta purpurea* (L.) Cabrera, 3391  
*Helenium flexuosum* Raf., 3381  
*Helianthus angustifolius* L., 4431  
†*Iva angustifolia* Nutt. ex DC., 4578  
*Iva annua* L., 4423  
*Krigia dandelion* (L.) Nutt., 3293  
*Liatris acidota* Engelm. & A. Gray, 4269  
†*Packera tampicana* (DC) C. Jeffrey, 3341  
†*Parthenium hysterophorus* L., 4586  
*Pityopsis graminifolia* (Michx.) Nutt., 3599  
†*Pluchea foetida* (L.) DC., 4375  
†*Pyrrhopappus carolinianus* (Walter) DC., 4133  
*Rudbeckia hirta* L. var. *angustifolia* (T.V. Moore) Perdue, 3290  
\**Rudbeckia texana* (Perdue) P.B. Cox & Urbatsch, 4289  
*Silphium radula* Nuttall var. *gracile* (A. Gray) J.A. Clevinger, 3291  
*Solidago altissima* L. subsp. *altissima*, 4570  
†*Solidago odora* Aiton, 3600  
*Solidago stricta* Aiton, 4573  
*Solidago tortifolia* Elliott, 4360  
†*Symphyotrichum divaricatum* (Nutt.) G.L. Nesom, 4584  
*Symphyotrichum dumosum* (L.) G.L. Nesom, 4579  
*Symphyotrichum pratense* (Raf.) G.L. Nesom, 2677  
†*Vernonia baldwinii* Torr., 4377

**Buddlejaceae**  
†*Polypremum procumbens* L., 3394

**Campanulaceae**  
*Lobelia puberula* Michx., 4143

**Clusiaceae**  
†*Hypericum drummondii* (Grev. & Hook.) Torr. & A. Gray, 4385

**Convolvulaceae**  
*Evolvulus sericeus* Sw. var. *sericeus*, 4271  
*Ipomoea cordatotriloba* Dennst. var. *cordatotriloba*, 4392

**Droseraceae**  
*Drosera brevifolia* Pursh, 3294

**Euphorbiaceae**  
*Acalypha gracilens* A. Gray var. *gracilens*, 4383  
*Croton capitatus* Michx. var. *lindheimeri* (Engelm. & A. Gray) Müll. Arg., 4388  
*Croton glandulosus* L. var. *lindheimeri* Müll. Arg., 4277  
†*Croton glandulosus* L. var. *septentrionalis* Müll. Arg., 4387  
*Euphorbia bicolor* Engelm. & A. Gray, 4394  
†*Euphorbia maculata* L., 4384

**Fabaceae**  
†*Acacia farnesiana* (L.) C. Willd. var. *farnesiana*, 3339  
*Baptisia bracteata* Muhl. ex Elliott var. *leucophaea* (Nutt.) Kartesz & Gandhi, 3292

*Baptisia sphaerocarpa* Nutt., 3338  
*Centrosema virginianum* (L.) Benth., 4270  
*Chamaecrista fasciculata* (Michx.) Greene, 4149  
*Mimosa nuttallii* (DC.) B.L. Turner, 3393  
†*Mimosa strigillosa* Torr. & A. Gray, 4585  
*Neptunia lutea* (Leavenw.) Benth., 3392  
*Neptunia pubescens* Benth. var. *pubescens*, 4428  
*Sesbania drummondii* (Rydb.) Cory, 4372  
†*Strophostyles leiosperma* (Torr. & A. Gray) Piper, 4276  
*Tephrosia onobrychoides* Nutt., 4146  
*Vicia ludoviciana* Nutt. subsp. *ludoviciana*, 3278

### Gentianaceae

*Sabatia campestris* Nutt., 3343

### Geraniaceae

*Geranium carolinianum* L. var. *carolinianum*, 3280

### Haloragaceae

*Proserpinaca palustris* L., 4119

### Hydrophyllaceae

*Hydrolea ovata* Nutt. ex Choisy, 4367

### Lamiaceae

*Physostegia intermedia* (Nutt.) Engelm. & A. Gray, 3382  
†*Salvia azurea* Lam. var. *grandiflora* Benth., 4278  
*Scutellaria parvula* Michx. var. *parvula*, 3283

### Linaceae

*Linum medium* (Planch.) Britton var. *texanum* (Planch.) Fernald, 4144

### Lythraceae

*Lythrum alatum* Pursh var. *lanceolatum* (Elliott) Rothr., 4376

### Malvaceae

*Callirhoë involucrata* (Torr. & A. Gray) A. Gray var. *lineariloba* (Torr. & A. Gray) A. Gray, 3398

### Melastomataceae

†*Rhexia mariana* L. var. *exalbida* Michx., 4150

### Onagraceae

*Ludwigia glandulosa* Walter, 4137  
*Ludwigia linearis* Walter, 4366  
*Oenothera laciniata* Hill, 3277

### Passifloraceae

*Passiflora incarnata* L., 3400

### Plantaginaceae

*Plantago virginica* L., 3336

### Polygalaceae

*Polygala incarnata* L., 4134

### Polygonaceae

*Polygonum hydropiperoides* Michx., 4368  
†*Rumex hastatulus* Baldwin, 3390

### Primulaceae

*Anagallis minima* (L.) E. H. L. Krause, 3276

### Ranunculaceae

*Ranunculus laxicaulis* (Torr. & A. Gray) Darby, 3274  
\**Thalictrum texanum* (A. Gray) Small, 3286



Rosaceae

†*Rubus trivialis* Michx., 3275

Rubiaceae

*Diodia virginiana* L., 4142  
*Galium tinctorium* L., 4043  
*Houstonia pusilla* Schoepf, 3285

Scrophulariaceae

†*Agalinis fasciculata* (Elliott) Raf., 4379

*Agalinis viridis* (Small) Pennell, 4432  
*Buchnera americana* L., 2598  
*Castilleja indivisa* Engelm., 3289  
*Mecardonia acuminata* (Walter) Small, 4436  
†*Nuttallanthus texanus* (Scheele) D. Sutton, 3273

Verbenaceae

†*Phyla incisa* Small, 4042  
*Verbena halei* Small, 3401

TABLE 1. Taxonomic summary of vascular plants of Mowotony Prairie.

	Families	Genera	Species		Total
			Native	Non-native	
Monocots	10	41	88	4	92
Eudicots	31	88	107	0	107
Totals	41	129	195	4	199

This research resulted in collections of 199 species of vascular plants representing 41 families and 129 genera (Table 1). The four families with the most species were Poaceae (45), Asteraceae (38), Cyperaceae (30), and Fabaceae (19). Species-rich genera included *Carex* (7 spp.), *Cyperus* (8 spp.), *Juncus* (6 spp.), *Panicum* (5 spp.), and *Paspalum* (6 spp.). Non native species (*Cyperus haspan*, *Briza minor*, *Cynodon dactylon*, and *Paspalum urvillei*) accounted for 2% of the total number of species.

Of the 195 native species that occur at Mowotony Prairie, 41 are not known from Nash Prairie (Rosen 2007). One family, Buddlejaceae, is not known from Nash Prairie (Rosen 2007). The native vascular plant taxa reported here combined with those reported from Nash Prairie provides a documented 63 families and 331 species for remnant coastal grasslands of the Upper Texas Coast.

Nine endemic, rare, or regionally rare species found at Nash Prairie also occur at Mowotony Prairie: *Cooperia traubii*, *Eleocharis compressa* var. *acutisquamata*, *E. wolfii*, *Scleria muehlenbergii*, *Juncus elliotii* var. *elliottii*, *Bothriochloa exaristata*, *Sporobolus silveanus*, *Rudbeckia texana*, and *Thalictrum texanum*. An additional interesting characteristic of Mowotony Prairie is the local abundance and dominance of uplands by *Sporobolus silveanus*. This species is endemic to the southeastern United States (Louisiana, Oklahoma, Texas) where it grows in blackland prairies, wet to mesic pine woodlands and adjacent glades and barrens (Gould 1975; Flora of North America Editorial Committee 2003). Diamond and Smeins (1985) described a novel *S. silveanus*-*Carex meadii* grassland type from the northern end of the Blackland Prairie region of Texas. This occurrence of seemingly the same or similar community over 500 km south of sites where it was discovered and described by Diamond and Smeins (1985) might indicate that it was more widespread, and much of its original extent has been destroyed.

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